UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,200	05/02/2001	Gregory Ciurpita	2925-0492P	4515

30594   7590   07/19/2005

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER
WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>29 April 2005</u>.

2a)☒ This action is **FINAL.** 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-27</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>5/2/2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In response to the office action from 2/3/2005, the applicant has submitted an

amendment, filed 4/29/2005, amending claims 1 and 13, while arguing to traverse the art

rejection based on the limitation regarding the user ability to interrupt a recognition result prior

to being fed back for verification *(Amendment, Pages 7-8)*. The applicant's arguments have been

fully considered but are moot with respect to the new grounds of rejection in view of Ammicht et

al *(U.S. Patent: 6,246,986)*, necessitated by the claim amendments.

Response to Arguments

2.   In response to the applicant's challenge of the official notice taken with respect to Claims

7-8 and 22-23 *(Amendment, Pages 8-9)*, the examiner notes that the position of official notice

was taken with knowledge of prior art that teaches features similar to the claimed invention of

claims 7-8 and 22-23, which has been provided below in support of the official notice:

Vanbuskirk et al *(U.S. Patent: 6,505,155)*- teaches a method for providing prompts

suggesting the use of shorter speech utterances (commands) in response to poor recognition

accuracy, which allows the user to learn the most accurate utterances by providing a list of the

high recognition (shorter) speech segments *(Col. 8, Lines 40-54)*.

The teachings of Vanbuskirk, Gerson et al *(U.S. Patent: 4,870,686)*, and Ammicht et al *(U.S. Patent: 6,246,986)* are analogous art because they are in a similar field of endeavor in speech-controlled interfaces. Furthermore, Vanbuskirk is obvious in combination with Gerson and Ammicht for the benefit of more accurate speech recognition and lowered likelihood of a recognition error (Vanbuskirk, Col 8, Lines 40-54). Since the teachings of Vanbuskirk supports the official notice taken with respect to Claims 7-8 and 22-23, the rejection of these claims is maintained and repeated below.

Also of note:

Pawlewski *(U.S. Patent: 6,389,392)*- teaches that partitioning speech into smaller segments leads to higher recognition accuracy (Col. 5, Line 53- Col. 6, Line 6).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-5, 7-8, 10-15, 18, 20-23, and 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al *(U.S. Patent: 4,870,686)* in view of Ammicht et al *(U.S. Patent: 6,246,986)*.

With respect to **Claims 1 and 13**, Gerson discloses:

Receiving at least a current subgroup of speech units that form part of a complete speech

sequence that is to be input from a user, the complete speech sequence being embodied as at least

one of a word and a password comprised of a plurality of alphanumeric characters, the subgroup

being one or more alphanumeric characters of the complete speech sequence *(partial digit*

sequence of a complete keyword, Col. 7, Lines 16-25 and abstract);

Detecting a natural pause between input subgroups such that a pause between two

alphanumeric characters in a given subgroup or a pause between one alphanumeric character and

a subgroup are detected *(pause detection, Col. 7, Lines 16-68)*;

Recognizing the speech units of the subgroup to provide a recognition result *(recognizing*

speech and displaying and synthesizing the result after a pause, Col. 7, Lines 38-56); and

Immediately feeding back the recognition result for verification by the user *(display and*

synthesis of a recognition result after a detected pause, Col. 7, Lines 27-56).

Although Gerson teaches a method of digit keyword recognition and pause detection for

recognition feedback, Gerson does not teach the use of a barge-in feature that allows a user to

interrupt a recognition result before it is completely fed back to the user, however Ammicht

teaches such a barge-in feature *(Col. 3, Lines 35-45; and Col. 5, Lines 20-35)*.

Gerson and Ammicht are analogous art because they are from a similar field of endeavor

in speech recognition systems capable of recognizing spoken digits. Thus, it would have been

obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings

of Gerson with the "barge-in" feature taught by Ammicht in order to help facilitate user-machine

interactions by allowing a user to interrupt a prompt with a meaningful speech input at any time

(Col. 2, Lines 19-29; Col. 3, Lines 35-45).

With respect to **Claims 2 and 14**, Gerson discloses:

A speech recognition method and system, wherein said user is only prompted to repeat said subgroup for re-recognition and re-verification if a rejection criteria is met *(repeat prompt if no keyword is recognized, Col. 7, Lines 16-25, and a confirmation to indicate that an input has been cleared and further speech can be input upon the utterance of a "clear" command, Col. 7, Lines 27-56).*

With respect to **Claims 3 and 20**, Gerson recites:

Repeating the steps of Claim 1 for remaining input subgroups until it is determined that the complete speech sequence has been recognized *(repeating the recognition of partial digit strings until the utterance of a terminate command, Col. 7, Lines 56-68).*

With respect to **Claims 4 and 21**, Gerson recites:

A speech recognition method and system, wherein the last step of Claim 1 is affected using pre-recorded prompts or via text-to-speech synthesis, (TTS) to feedback the recognition result *(synthesized recognition results, Col. 7, Lines 27-68).*

With respect to **Claims 5 and 18**, Gerson discloses:

The rejection criterion is embodied as a negative utterance spoken by the user after receiving the fed back recognition result *("clear" command word that negates an undesired recognition result, Col. 7, Lines 27-56).*

With respect to **Claims 7 and 22**, Gerson in view of Ammicht teaches the speech recognition method and system capable of recognizing digit segments through pause detection means to enable, upon input of a "clear" command, correction of input and recognition errors, as applied to Claims 2 and 14. Although Gerson in view of Ammicht does not specifically suggest

prompting a user to input shorter speech segments upon repeated recognition errors, the

examiner takes official notice that it would have been obvious to one of ordinary skill in the art,

at the time of invention, to prompt the user to input shorter speech segments if repeated

recognition errors occur, because shorter utterances have less complex speech models and thus,

logically, would provide a higher level of recognition accuracy. Therefore, prompting a user to

input easily recognized, shorter speech segments would provide a well-known means of

increasing recognition accuracy.

With respect to **Claims 8 and 23**, Gerson in view of Ammicht teaches the speech

recognition method and system capable of recognizing digit segments through pause detection

means to enable, upon input of a "clear" command, correction of input and recognition errors, as

applied to Claims 2 and 14. Although Gerson in view of Ammicht does not specifically suggest

prompting a user to input shorter speech segments upon repeated recognition errors, the

examiner takes official notice that it would have been obvious to one of ordinary skill in the art,

at the time of invention, that by speaking shorter and more easily recognized speech segments, a

user would gradually learn the proper way to input recognizable utterances. For instance, a user

may speak a string of digits too quickly to be recognized correctly. By speaking each speech

segment individually, the speaker would be able to attempt a single utterance segment multiple

times and gradually come to understand the proper method of producing recognizable speech.

Therefore, prompting a user to speak smaller speech segments acts a means of training that user

to properly input an utterance.

With respect to **Claims 10 and 25**, Gerson discloses:

The speech units are selected from any of spoken digits and spoken letters *(spoken digits,*

Col. 7, Lines 16-25).

With respect to **Claims 11 and 26**, Gerson recites:

A speech recognition method and system, wherein input of a next subgroup after

receiving the fed back recognition result indicates a correct recognition of the currently input

subgroup *(Col. 7, Lines 27-56)*.

With respect to **Claims 12 and 27**, Gerson recites:

The speech recognition unit determines a confidence level for the recognition result

(distance metric for determining a most likely template match, Col. 4, Lines 38-51).

With respect to **Claim 15**, Gerson discloses:

A speech recognition system, wherein the speech recognition unit compares the input subgroup

with stored recognition grammar in order to determine the recognition result *(speech recognizer*

having a digit template, Col. 4, Lines 38, and Col. 7, Lines 16-68).

5.   **Claims 6, 17, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gerson et al in view of Ammicht et al, and further in view of Hou et al *(U.S. Patent: 5,325,421)*.

With respect to **Claims 6, 17, and 19**, Gerson in view of Ammicht teaches the speech

recognition system capable of detecting pauses between digit segments and prompting a user to

repeat a subgroup if a digit is not recognized, as applied to Claim 2. Gerson in view of Ammicht

does not teach the ability to include a negating speech input in a spoken digit string, however,

Hou discloses such a means *(cancel command immediately following a digit sequence, Col. 10,*

Lines 42-58).

Gerson, Ammicht, and Hou are analogous art because they are from a similar field of

endeavor in speech-controlled interfaces. Thus, it would have been obvious to a person of

ordinary skill in the art, at the time of invention, to modify the teachings of Gerson in view of

Ammicht with the ability to include a negating speech input in a spoken digit string as taught by

Hou in order to provide a means for a user to delete an incorrect speech input while entering a

digit string *(Hou, Col. 10, Lines 47-51)*, thus implementing a more efficient digit recognition

processing by bypassing the partial digit string verification step as taught by Gerson and applied

to Claim 1 .

6.   **Claims 9 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson

et al in view of Ammicht et al, and further in view of Larsen *("Investigating a Mixed-Initiative*

Dialogue Management Strategy," 1997).

With respect to **Claims 9 and 24**, Gerson in view of Ammicht teaches the speech

recognition system capable of detecting pauses between digit segments and prompting a user to

repeat a subgroup if a digit is not recognized, as applied to Claim 2. Gerson in view of Ammicht

does not teach the ability to enter speech units using a dial pad upon repeated recognition errors,

however Larsen discloses:

A speech recognition method and system, wherein if said rejection criteria are met

repeatedly, the user is prompted to use a dial pad to enter the speech units *(ability to switch to*

DTMF input mode upon repeated recognition errors, Page 66-67, Application).

Gerson, Ammicht, and Larsen are analogous art because they are from a similar field of

endeavor in speech-controlled interfaces. Thus, it would have been obvious to a person of

ordinary skill in the art, at the time of invention, to modify the teachings of Gerson in view of

Ammicht with the ability to enter speech units in a DTMF input mode upon repeated recognition

errors as taught by Larsen to offer an alternative means of inputting information in a speech

interface if a user becomes frustrated with repeated recognition errors.

7.   **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al in

view of Ammicht et al, and further in view of Ladd et al *(U.S. Patent: 6,269,336)*.

With respect to **Claim 16**, Gerson teaches the speech recognition system capable of

detecting pauses between digit segments and featuring a digit grammar for recognition, as

applied to Claim 15. Gerson does not suggest that the recognition grammar is stored in a remote

memory accessible by the speech recognition unit, however Ladd teaches such a configuration

(grammar database at a server, Col. 8, Lines 55-61).

Gerson, Ammicht, and Larsen are analogous art because they are from a similar field of

endeavor in speech recognition. Thus, it would have been obvious to a person of ordinary skill

in the art, at the time of invention, to modify the teachings of Gerson view of Ammicht with a

recognition grammar stored at a remote server database as taught by Ladd in order to provide a

well-known means of conserving system memory in a device with limited storage.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

Setlur et al *(U.S. Patent: 5,956,675)-* teaches a method for implementing a speech

prompt "barge-in" function.

Dewaele *(U.S. Patent: 6,047,257)-* discloses a "barge-in" feature used to interrupt a

prompt.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632

and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-

Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wayne Young can be reached at (571) 272-7582. The fax/phone number for the

Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the technology center receptionist whose telephone number is (703) 306-

0377.

James S. Wozniak
6/17/2005

SUSAN MCFADDEN
PRIMARY EXAMINER